



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/691,779	10/23/2003	Jerry A. Pickering	10161	7163

7590

02/24/2006

Mark Bocchetti
Eastman Kodak Co.
343 State St.
Rochester, NY 14650-2201

EXAMINER

NOTE, JANIS L

ART UNIT	PAPER NUMBER
----------	--------------

1756

DATE MAILED: 02/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

4

Office Action Summary	Application No. 10/691,779	Applicant(s) PICKERING ET AL.	
	Examiner Janis L. Dote	Art Unit 1756	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-65 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-65 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 October 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>1/16/04</u> . | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 1756

1. The examiner has crossed-out references US application Nos. 09/450,302 and 10/454,897, which are listed on the form PTO-1449 filed on Jan. 16, 2004, because the applications have issued as U.S. Patent Nos. 6,821,626 and 6,894,137, respectively. The examiner has considered and listed the two US patents on the form PTO-1449 filed on Jan. 16, 2004.

2. The abstract of the disclosure is objected to because it is not limited to a single paragraph. Correction is required. See MPEP § 608.01(b).

Applicants are reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

3. The disclosure is objected to because of the following informalities:

(1) The specification in paragraph 02 at page 1 lists two US applications, but fails to identify the applications by their serial numbers. Nor does the specification provide the current status of said applications. Applicants are requested to provide the missing serial numbers and the current statuses of the two applications.

(2) The use of trademarks, e.g., Viton [sic: VITON] in paragraph 0107 at page 29, has been noted in this application. The trademarks should be capitalized wherever they appear and be accompanied by the generic terminology. This example is not exhaustive. Applicants should review the entire specification for compliance.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

(3) The instant specification refers to the disclosures in US application Nos. 09/979,585 and 09/450,302 in paragraphs 088 and 0119, respectively, but fails to identify their current status. Applicants are requested to provide the current statuses of the two applications.

Appropriate correction is required.

4. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required:

(1) In claim 20, the recitation "the discontinuous phase comprises at least about 20 parts per 100 parts by weight of the fluoroelastomer continuous phase" lacks antecedent basis in the specification. See paragraph 0183 of the specification, which discloses that the "fusing surface layer comprises at least about 20 parts of the discontinuous phase per 100 parts by weight of the fluoroelastomer continuous phase" (emphasis added), not the discontinuous phase as recited in instant claim 20.

(2) In claim 41, the recitation "the discontinuous phase comprises at least about 30 parts per 100 parts by weight of the fluoroelastomer continuous phase" lacks antecedent basis in the specification. See paragraph 0183 of the specification, which discloses that the "fusing surface layer comprises at least about 30 parts of the discontinuous phase per 100 parts by weight of the fluoroelastomer continuous phase" (emphasis added), not the discontinuous phase as recited in instant claim 41.

Art Unit: 1756

(3) In claim 62, the recitation "the discontinuous phase comprises at least about 40 parts per 100 parts by weight of the fluoroelastomer continuous phase" lacks antecedent basis in the specification. See paragraph 0183 of the specification, which discloses that the "fusing surface layer comprises at least about 40 parts of the discontinuous phase per 100 parts by weight of the fluoroelastomer continuous phase" (emphasis added), not the discontinuous phase as recited in instant claim 62.

5. The examiner notes that the instant specification in paragraph 036 defines the term "modulus" recited in the instant claims as the "tensile modulus of elasticity" determined by a "dynamic mechanical analysis, at a frequency equal to the frequency of the fuser member."

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1-65 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point

Art Unit: 1756

out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1, 2, 22, 23, 43, 44, 64, and 65 and claims dependent thereon are indefinite in the phrase "the difference between the fluoroelastomer continuous phase and the modulus of the discontinuous phase is sufficiently great" (emphasis added) because it is not clear what is meant by the term "sufficiently great," which is not defined in the instant specification. Nor is it clear what are the conditions under which the difference is considered "sufficiently great."

Claims 1, 2, 22, 23, 43, 44, 64, and 65 and claims dependent thereon are indefinite in the phrase "the modulus of the discontinuous phase is sufficiently low" (emphasis added) because it is not clear what is meant by the term "sufficiently low," which is not defined in the instant specification. Nor is it clear what are the conditions under which the modulus is considered "sufficiently low."

The examiner notes that the "sufficiency" conditions recited in the instant claims cannot be the gloss condition, which is said to depend on the heat transfer.

Claim 20 is indefinite in the phrase "the discontinuous phase comprises at least about 20 parts per 100 parts by weight of the fluoroelastomer continuous phase" because it is not clear

Art Unit: 1756

to how the discontinuous phase comprises the continuous phase when the discontinuous phase is dispersed in the continuous phase. In other words, it is the continuous phase that comprises the discontinuous phase.

Claim 41 is indefinite in the phrase "the discontinuous phase comprises at least about 30 parts per 100 parts by weight of the fluoroelastomer continuous phase" because it is not clear to how the discontinuous phase comprises the continuous phase when the discontinuous phase is dispersed in the continuous phase. In other words, it is the continuous phase that comprises the discontinuous phase.

Claim 62 is indefinite in the phrase "the discontinuous phase comprises at least about 40 parts per 100 parts by weight of the fluoroelastomer continuous phase" because it is not clear to how the discontinuous phase comprises the continuous phase when the discontinuous phase is dispersed in the continuous phase. In other words, it is the continuous phase that comprises the discontinuous phase.

Claims 20, 41, and 62 are further in indefinite because it is not clear what is the basis of the limitations "at least about 20 parts [claim 41: 30 parts; claim 62: 40 parts]," e.g., by weight, volume, etc.

Art Unit: 1756

8. In the interest of compact prosecution, the examiner has interpreted the amount ranges recited in instant claims 20, 41, and 62 as referring to the amount by weight of the discontinuous phase per 100 parts by weight of the fluoroelastomer continuous phase present in the fusing surface layer.

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this

Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

11. Claims 1-5, 7-26, 28-47, and 49-65 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,395,723 (Mahabadi)

Art Unit: 1756

combined with US 6,586,100 B1 (Pickering'100), as evidenced by applicants' admissions in examples 1-7 and in Table 2 of the instant specification.

Mahabadi discloses an image forming method for forming an image on a substrate comprising the step of heat fixing a toner image to a substrate with a heated fusing roller. According to Mahabadi, the toner image is a low gloss image having a gloss of preferably from about 1 to about 15 gloss units. Mahabadi exemplifies forming toner images having a gloss of less than 5 gloss units. Col. 6, lines 35-41; col. 10, lines 54-56; col. 20, lines 49-65; and examples I-V in Table 1 at cols. 24-25. A gloss of "less than 5 gloss units" meets the gloss ranges recited in instant claims 1, 22, 43, and 64. The toner comprises a binder resin that comprises an unsaturated linear polyester resin that is partially cross-linked, i.e., a mixture of a linear unsaturated polyester and a cross-linked polyester resin. Col. 6, lines 30-34; col. 9, lines 17-28; and examples I-V. The toner meets the compositional limitations recited in instant claims 5, 7, 26, 28, 47, and 49. According to Mahabadi at col. 10, lines 16-21, the toner preferably has a melt viscosity of about 20,000 to about 100,000 poise at 100°C and from about 1,000 to about 80,000 poises at 160°C. The lower endpoint, "about 20,000 poise," of the melt viscosity range of

Art Unit: 1756

about 20,000 to about 100,000 poise at 100°C is numerically within the viscosity range of "at least about 10 Kpoise" recited in instant claims 3, 24, and 45. In addition, the Mahabadi melt viscosity range overlaps the viscosity range of "at least about 40 Kpoise" recited in instant claims 4, 7, 25, 28, 46, and 49. Mahabadi at col. 10, lines 36-40, further teaches that the toner preferably has a minimum fixing temperature of from about 100 to about 160°C. Thus, Mahabadi teaches a toner having a melt viscosity at a fixing temperature that meets the viscosity ranges recited in instant claims 3-5, 7, 24-26, 28, 45-47, and 49.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Mahabadi, to adjust, through routine experimentation, the portions of the cross-linked polyester resin and the linear polyester resin in the toner disclosed by Mahabadi, such that the resultant toner has a melt viscosity at the time of fixing that is within the viscosity ranges recited in claims 3-5, 7, 24-26, 28, 45-47, and 49. That person would have had a reasonable expectation of successfully obtaining an image forming method that provides low gloss toner images having a gloss of less than 5 gloss units.

Art Unit: 1756

Mahabadi does not exemplify a fusing roller having the composition recited in the instant claims. However, Mahabadi does not limit the type of fusing roller used.

Pickering'100 discloses a fusing roller that comprises a base and a fusing surface layer that comprises a fluorocarbon-silicone interpenetrating network. The network comprises a fluoroelastomer continuous phase that comprises a dispersed discontinuous phase comprising the curable silicone rubber associated with the SFR-100 produced by General Electric. The fluoroelastomer continuous phase comprises the fluoroelastomer associated with the tradename VITON A produced by E.I. DUPONT. The dispersed phase has an average domain size of 28.6 μm . Example 3 at col. 11 and in Table 2 at col. 12; and col. 12, lines 56-59. The average domain size of 28.6 μm is within the domain mean diameter ranges recited in instant claims 19, 40, and 61. The silicone rubber associated with the SFR-100 is identified as a mixture of a polydimethylsiloxane and a polytrimethylsilyl silicate resin having monofunctional and tetrafunctional repeating units. Col. 10, lines 17-29. The silicone rubber SFR-100 meets the discontinuous phase compositional limitations and particle size recited in instant claims 9-13, 19, 30-34, 40, 51-55, and 61. The Pickering'100 dispersed discontinuous phase is present in an amount of about

Art Unit: 1756

45 parts by weight per 100 parts by weight of the fluoroelastomer continuous phase. The amount of about 45 parts by weight was determined from the information provided in example 3. The amount of about 45 parts by weight of the discontinuous phase per 100 parts by weight of the continuous phase meets the amount ranges recited in instant claims 20, 41, and 62.

Pickering'100 does not explicitly disclose that the discontinuous phase is present in the fusing surface layer in the volume percentages recited in instant claims 21, 42, and 63. However, the amount of the Pickering'100 discontinuous phase is present in the fusing layer in an amount of about 30 wt% based on the total weight of the fusing layer. The amount of about 30 wt% was determined from the information provided in example 3. The amount of 30 wt% is within the numerical ranges of the volume parentage ranges recited in instant claim 21, 42, and 63. Thus, based on the presumption that the discontinuous phase and the continuous phase have approximately the same density, it would be reasonable to conclude that the discontinuous phase is present in the surface layer in an amount of about 30% by volume of the fusing layer, which is within the ranges recited in instant claims 21, 42, and 63. Accordingly, the burden is on applicants to prove otherwise. In re

Art Unit: 1756

Fitzgerald, 205 USPQ 594 (CCPA 1980).

According to Pickering'100, the fusing member has excellent toner release properties without sacrificing coating quality or uniformity. The fusing member also has improved wear resistance. Col. 3, lines 37-47; and col. 13, lines 49-55.

Pickering'100 does not disclose that the fluoroelastomer continuous phase and the discontinuous silicone rubber phase have the modulus limitations recited in the instant claims. However, as discussed above, the Pickering'100 fluoroelastomer continuous phase and the discontinuous silicone rubber phase meet the compositional limitations recited in the instant claims. In the instant specification, the examples of the invention use the same fluoroelastomer VITON A and the same silicone rubber SFR-100 as the fluoroelastomer in the continuous phase and the elastomer in the discontinuous phase. See, for example, example 1 in paragraph 0238. The instant specification does not explicitly disclose that the continuous phases and dispersion phases in examples 1-7 have the required modulus limitations recited in the instant claims. However, the instant specification shows that the fusing members in examples 1-7 provide images with the gloss recited in the instant claims. Thus, it appears that the fusing members in examples 1-7 satisfy the required modulus limitations recited in the instant claims.

Art Unit: 1756

Accordingly, because the Pickering'100 fluoroelastomer continuous phase and the discontinuous silicone rubber phase appear to the same or substantially the same as those exemplified in the inventive examples of the instant specification, it is reasonable to presume that the Pickering'100 fluoroelastomer continuous phase and the discontinuous silicone rubber phase satisfy the modulus properties recited in the instant claims. The burden is on applicants to prove otherwise. Fitzgerald, supra.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Pickering'100, to use the Pickering'100 fusing roller as the fusing roller in the image forming methods disclosed by Mahabadi and rendered obvious over the teachings of Mahabadi. That person would have had a reasonable expectation of successfully obtaining an image forming method that provides low gloss toner images having a gloss of less than 5 gloss units for many repeated runs with improved toner release properties and without the deterioration of the fusing roller.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janis L. Dote whose telephone number is (571) 272-1382. The examiner can normally be reached Monday through Friday.

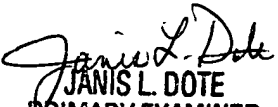
Art Unit: 1756

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Mark Huff, can be reached on (571) 272-1385. The central fax phone number is (571) 273-8300.

Any inquiry regarding papers not received regarding this communication or earlier communications should be directed to Supervisory Application Examiner Ms. Claudia Sullivan, whose telephone number is (571) 272-1052.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JLD
Feb. 20, 2006


JANIS L. DOTE
PRIMARY EXAMINER
GROUP 1500
1700